

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Allocation and Designation of Spectrum for) IB Docket No. 97-95
Fixed Satellite Services in the 37.5-38.5 GHz,)
40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands;)
Allocation of Spectrum to Upgrade Fixed and) RM-8811
Mobile Allocations in the 40.5-42.5 GHz Frequency)
Band, Allocation of Spectrum in the 46.9-47.0 GHz)
Frequency Band for Wireless Services; and)
Allocation of Spectrum in the 37.0-38.0 GHz and)
40.0-40.5 GHz for Government Operations)

TO: The Commission

CONSOLIDATED REPLY OF GE AMERICAN COMMUNICATIONS, INC.

GE American Communications, Inc. ("GE Americom") hereby submits its consolidated reply to the comments concerning its Petition for Reconsideration ("Petition") of the *Report and Order* in the above-captioned proceeding (the "*Order*").

The record here strongly supports the need for allocation of additional spectrum in the 36-51 GHz frequency band (the "V-band") for fixed satellite service ("FSS"). The V-band is the primary spectrum available for future satellite system expansion. Significantly, only two parties have opposed expansion of satellite spectrum, and even those parties focus almost exclusively on spectrum below 40 GHz. The Commission should grant GE Americom's reconsideration petition and provide at least six GHz of V-band spectrum for FSS use.

INTRODUCTION

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The purpose of the *Order* here was to provide a comprehensive V-Band frequency plan that met the future service requirements of the public. Yet the

Order designated only 2 GHz of uplink and 2 GHz of downlink spectrum to FSS systems, even though the record -- including pending applications -- demonstrated that this allocation was insufficient. GE Americom's Petition demonstrated that the *Order* required reconsideration insofar as it failed to: (1) designate a larger amount of V-band spectrum for FSS, (2) coordinate this spectrum with international allocations, or (3) specify what level of technical protection would be afforded geostationary ("GSO") FSS.

Simultaneously with the filing of the Petition, Hughes Communications, Inc. ("HCI"), filed a separate petition for reconsideration (the "HCI Petition;" collectively with the Petition, the "Petitions").¹ The HCI Petition also demonstrated that the *Order's* FSS designation was not sufficient, and noted that the record did not reflect any need for Fixed Services ("FS") spectrum above 40 GHz.

Three parties filed in response to the Petitions.² One, Spectrum Astro, Inc. ("SAI"), agreed that additional V-band spectrum is necessary for FSS to develop, and that the Commission did not sufficiently address the evidence and comments in issuing the *Order*. Only two parties opposed the Petitions: the Fixed Wireless Communications Coalition ("FWCC") and Winstar Communications, Inc.

¹ A third petition for reconsideration, filed by TRW, Inc., addressed additional aspects of the *Order* and is not further addressed here.

² See Comments on Petitions for Reconsideration of Spectrum Astro, Inc. (filed April 6, 1999) ("SAI Comments"); Opposition of Winstar Communications, Inc. to Petitions for Reconsideration (filed April 6, 1999) ("Winstar Opposition") and Opposition to Petitions for Reconsideration of Fixed Wireless Communications Coalition (filed April 6, 1999) ("FWCC Opposition").

("Winstar"). Neither offered compelling support for the *Order's* limited FSS designations, or provided solid arguments against revision of the *Order* as requested by GE Americom and HCL.

I. THE *ORDER* DID NOT JUSTIFY THE LIMITED FSS DESIGNATIONS IN THE V-BAND.

In March 1997 the Commission proposed to designate 2 GHz of uplink and 2 GHz of downlink frequencies in the V-band for the exclusive use of FSS.³ In response to the *Notice*, many commenters addressed the need for additional FSS spectrum and the importance of the V-band to FSS development. In particular, they noted that FSS systems currently cannot use the frequencies immediately above 51 GHz because common atmospheric conditions attenuate satellite transmissions using such frequencies. Later in 1997 15 applications for FSS systems using V-band frequencies were filed -- demonstrating the need for a significant FSS allocation in the V-band.

Notwithstanding the many FSS comments and new FSS applications, the *Order* did not increase the amount of FSS-designated spectrum proposed in the *Notice*. See Petition at 5 & n.5. Although the *Order* claimed to consider the 15 new FSS applications for V-band spectrum -- as opposed to the two FSS applications pending at the time the *Notice* was issued -- it nevertheless concluded that the FSS designations proposed in the *Notice* were adequate. To the extent the *Order* offered any explanation for this incongruity, it suggested that the grant of exclusive

³ *Notice of Proposed Rule Making, Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; et.al.*, 12 FCC Rcd 10130 (1997) ("*Notice*").

spectrum to FSS, and the potential of making certain other V-band spectrum available to FSS through auctions, would compensate for the smaller amount of spectrum. However, neither rationale explains how the *Order*, in light of the many new FSS applications and FSS comments, reasonably could designate for FSS only the same limited amount V-band spectrum that was proposed in the *Notice*.

A. The Petitions Demonstrate That At Least 6 GHz of V-Band Spectrum Must Be Designated for Exclusive FSS Use.

Both the Petitions and the SAI Comments illustrate that the *Order* did not adequately explain why so little V-band spectrum was designated for FSS. That such spectrum is to be exclusive -- without secondary assignments or “underlays” -- hardly explains why so much less V-band spectrum was designated for FSS than for fixed services, especially as the *Order* also made FS designations exclusive. *See* Petition at 7-8; HCI Petition at 6-7.

Both Petitions likewise demonstrate that the *Order*’s auction rationale -- that FSS systems may obtain additional V-band spectrum through auctions -- cannot camouflage the relative lack of FSS-designated spectrum in the *Order*.⁴ In light of the technologies and business plans involved, the theoretical possibility that an FSS system could be the highest bidder for some segment of spectrum does not offer a realistic means by which an FSS entity might obtain adequate spectrum.⁵

⁴ Petition at 8-9; HCI Petition at 7-8. That the *Order* specifically chooses to designate certain spectrum as FS, rather than “open” -- as even the Fixed Section of the Telecommunications Industry Association had proposed -- only underscores that the Commission intends that FS will use these to-be auctioned frequencies.

⁵ For instance, even if an FSS system were able to buy some auctioned spectrum, it likely would be blocked from implementing its system for fear of interference from

Moreover, both of the *Order*'s justifications for limiting FSS spectrum in the V-band fail to take into account two crucial facts:

- (1) the band is the last set of frequencies in which FSS might operate before common atmospheric conditions will preclude general satellite operations; and
- (2) the band already is subject to many competing FSS applications.

The clear comments of the FSS industry in the proceeding, and the many new applications for FSS systems using 6 GHz or more, confirmed the clear need for more V-band FSS spectrum prior to the *Order*. See SAI Comments at 4-5. In contrast, FS was "virtually silent" as to its need for V-band spectrum outside the 38.6-40.0 GHz band.⁶ Yet FS received 40 percent more spectrum throughout the V-band than FSS.⁷

or to other FS licensees using nearby frequencies. See HCI Petition at 8. One of the basic aims of the *Order* was to eliminate such cross-service interference. For the Commission to claim its limited designation of FSS spectrum may be remedied through FSS acquisition of FS spectrum at auction, which would increase the risk of such interference, either neglects or contradicts a basic goal of the *Order*.

⁶ HCI Petition at 5. Of course, a proceeding is not an "election by pleading." FWCC Opposition at 4. However, the fact that nearly all FSS-knowledgeable commenters stated that more V-band FSS designations were needed should serve as compelling evidence that the *Notice* had underestimated the need for FSS frequency designations.

⁷ Winstar's argument that 15 FSS applications do not indicate sufficient interest to justify additional designated spectrum demonstrates nothing more than a lack of understanding of the FSS industry. See Winstar Opposition at 6 n.13. Satellite systems do not file applications on an everyday basis -- approved FSS systems often take a decade to plan and implement, and the filing fee for such an application can run into the hundreds of thousands of dollars. The ratio of the number of applications of FSS systems to that of FS systems in the V-band is not the relevant comparison. Rather, the key comparison, and one which Winstar does not rebut, is that the Commission proposed to designate 4 GHz of V-band spectrum to FSS systems based on *two* FSS applications, and yet did not increase the amount of spectrum designated when several times more FSS applications were filed.

Finally, neither of the *Order's* justifications protect FSS systems from two areas of uncertainty caused by the *Order's* shortcomings. As the Commission admitted in the *Order*, it did not attempt to determine whether and how GSO/FSS systems will be able to share V-band spectrum with NGSO/FSS systems.⁸ Also, as discussed below, one-fourth of the *Order's* FSS downlink designations were not within permanent, international FSS allocations, which greatly increases the likelihood that domestic FSS V-band designations never will be consistent with international FSS allocations. Each of these uncertainties burden FSS systems with additional risks -- risks that are not shared by any other service. Accordingly, the *Order*, which did not explicitly address either of these items in this context, should have erred on the side of caution, and afforded FSS systems more spectrum.

B. The Record in the Proceeding Requires More than 1.5 GHz of FSS Downlink Designations to Align with Global Allocations.

Many of the comments in the proceeding explained the importance of globally consistent allocations to FSS. Petition at 10-13. Yet the *Order* did not ensure that FSS allocations in the V-band would be consistent with permanent international allocations. In light of the limited spectrum designated for FSS, the *Order* cannot, without justification, designate one-quarter of the very limited FSS downlink spectrum where no permanent FSS international allocation exists.

FWCC's contention that GE Americom must wait to bring its concerns to the ITU, not the FCC, fails to grasp a fundamental purpose of the Petition. If the

⁸ No party disputed the Petition's contention that the Commission erred when it neither addressed this issue nor specified how GSO/FSS V-band systems would be protected from NGSO/FSS systems in the *Order*. Petition at 13-15.

Order is not changed, GE Americom would have no recourse other than the ITU. However, a better FSS designation than that in the *Order* could ensure that the Commission's FSS V-band designation would be more extensive and more consistent with permanent international allocations.

FWCC's argument also demonstrates a complete misunderstanding of the ITU process. It is far easier (and far less risky) for the Commission to adjust its domestic designations than it is for the Commission, in conjunction with the National Telecommunications & Information Administration, to get a proposed change in international allocations on the ITU schedule, never mind persuading the rest of the world to agree to the change. FWCC should not ask the Commission to take on additional burdens and waste negotiating power at the ITU when the Commission instead simply could give FSS spectrum that is consistent with established international allocations in this proceeding.

II. NEITHER OPPOSITION JUSTIFIES THE *ORDER*.

Neither the FWCC nor Winstar demonstrate that the *Order* offers a sufficient explanation in support of its ultimate result. The FWCC does not attempt to justify the amount of V-band spectrum designated for FSS in the *Order* on the grounds suggested in the *Order*. Instead, it asserts that the *Order*'s justifications are "unarguably true" without addressing the Petitions' showing that neither justification, even if true, is adequate. FWCC Opposition at 2.

Winstar manages to provide even less support of the *Order*'s rationale. It contends that the Petitions must be denied because they rely on arguments

already considered and rejected by the Commission. But Winstar does not even attempt to suggest where the *Order* discussed -- never mind assessed -- the arguments discussed in the Petitions.⁹

Nor does either opposition devise any independent reason to deny the Petitions. Winstar's claim that *any* FSS designation in the V-band is premature again illustrates only a lack of knowledge of the long-term planning necessary in the FSS industry. Indeed, Winstar ignores the fundamental purpose of a band *plan* by attempting to argue that the only worthy consideration in determining a plan is whether a service could occupy the band immediately. If Winstar's first-come, first-serve mentality defined the Commission's efforts, there would be no need for a band plan, as the Commission could simply assign spectrum to the first party that requested it. Of course, such a result would contravene the Commission's purpose: to ensure that use of the electromagnetic spectrum advances the long-term *public* interest, not the immediate business concerns of FS entities that often do not provide communications service to anyone other than themselves. *See* FWCC Opposition at 5. Moreover, it has been well established in this proceeding that there is existing and growing demand for the rapid and global data transmission provided by GSO/FSS systems. *See, e.g.*, SAI Comments at 3.

⁹ *See* Winstar Opposition at 3 & 4. Winstar also overlooks that the rationale of *WWIZ, Inc.* only applies if the Commission had reasonably addressed the relevant issues in the initial order. Otherwise, the Commission is obligated to "articulate a rational connection between the facts presented to the Commission and the choice it has made" or risk being reversed. *See, e.g.*, HCI Petition at 2.

FWCC's attempts to justify the *Order* on grounds not discussed in the *Order* fare no better. First, FWCC claims that the Commission's actions -- or the possibility of such actions -- in other allocation proceedings justify the unequal designations in the V-band. Specifically, FWCC claims that reallocations in the 2 and 6 GHz bands from FS to mobile satellite services, and proposed reallocations in the 11 and 18 GHz bands, justify the disproportionate grant of spectrum to FS in the V-band. See FWCC Opposition at 5. However, such an argument ignores that increased allocations to *mobile* satellite services do not benefit or otherwise relate to allocations for GSO/FSS. In fact, all of the re-allocations, proposed or otherwise, cited by FS intend to benefit some service other than GSO/FSS.¹⁰ Most fundamentally, none of these complaints address matters relevant to the instant proceeding, and none can be used to justify the inequitable results of the *Order*.

Second, FWCC alleges that FSS does not deserve more spectrum because it uses wasteful modulation techniques. Such a criticism ignores the fundamental technical and operational differences between FS and FSS. FSS systems are typically point to multipoint, which can be far more efficient for data transmissions than a comparable series of point-to-point FS links. However, such

¹⁰ The change proposed in the *NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems*, ET Docket No. 98-206 (rel. Nov. 24, 1998) only splits existing FSS spectrum between GSO and NGSO. Meanwhile, the Commission's current proposal in the Ku-band proceeding would *reduce* the spectrum available to GSO/FSS on a primary or co-primary basis between 17.7 and 19.7 GHz from 1.1 GHz to 0.5 GHz, while FS maintains access to 1.25 GHz of its current 2.0 GHz allocation. See *Redesignation of the 17.7-19.7 GHz Frequency Band*, 13 FCC Rcd 19923 (1998). Lastly, FSS and FS have shared the 3.7-4.2 GHz band for many years, and the burdens of coordinating different systems in that band are likewise shared equally. Such long-standing sharing of the band is no reason for the Commission to discriminate in favor of FS in this proceeding.

point-to-multipoint transmissions, as well as other technical considerations, make it impracticable for FSS systems to use higher level codes that can be used by FS systems. Moreover, because many FS parties do not serve the public at large, FS systems may more easily update their technologies than FSS. It would be unrealistic for FSS systems to demand, for example, that all their C-band customers throughout the country update their satellite dishes every two years. Such distinctions between the services do not justify the Commission giving more spectrum to FS; in fact, as FSS systems inherently cannot use as high a coding as FS systems and cannot expect the public to update their FSS-related equipment, this argument would favor FSS receiving *more* V-band spectrum than FS.

Finally, the Commission cannot reject reconsideration of designations from 38 to 39 GHz simply to prevent uncertainty to FS parties.¹¹ Reconsideration of the Commission's actions is the right of parties to a proceeding, and the Commission cannot refuse to reconsider an order because such reconsideration might overturn a prior decision. Moreover, in this case, the uncertainty caused to FS applicants during reconsideration should be far less troubling or prolonged than that facing FSS parties, who do not know whether there is enough V-band spectrum designated for FSS to make a FSS V-band system commercially viable.¹²

¹¹ See Winstar Opposition at 5-6.


¹² In any event, under the Commission's current plan, certain segments of FS spectrum will be subject to auction proceedings, and, hence, uncertainty.

CONCLUSION

For the foregoing reasons, the Commission must reconsider the *Order* and revise the V-band designation plan to respond to the needs of the FSS industry.

Respectfully submitted,

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April 16, 1999

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